DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

PERMIT TO CONSTRUCT APPLICATION

Revision 2
02/13/07

Please see instructions on page 2 before filling out the form.

All information is required. If information is missing, the application will not be processed.

IDENTIFICATION	
1. Company Name	Happ Taylor & Sons DBA Kniferiver
2. Facility Name (if different than #1)	Kniferiver Haman
3. Facility I.D. No.	777-00383
4. Brief Project Description:	
FACILITY INFORMATION	
5. Owned/operated by: (√ if applicable)	☐ Federal government ☐ County government ☐ State government ☐ City government
6. Primary Facility Permit Contact Person/Title	Randy Walters / GM
7. Telephone Number and Email Address	208-687-8280 / randy.walters@kniferiver.com
8. Alternate Facility Contact Person/Title	Leo Shea / Aggregate Manager
9. Telephone Number and Email Address	208-687-8280 / leoshea@kniferiver.com
10. Address to which permit should be sent	P.O.Box 2047
11. City/State/Zip	Coeur d' Alene Id. 83816
12. Equipment Location Address (if different than #9)	8976 W. Wyoming Ave.
13. City/State/Zip	Rathdrum Id. 83858
14. Is the Equipment Portable?	☒ Yes ☐ No
15. SIC Code(s) and NAISC Code	Primary SIC: 1442 Secondary SIC (if any): 3273 NAICS: 212321
16. Brief Business Description and Principal Product	Ready Mix / Asphalt / Aggregate Producer
17. Identify any adjacent or contiguous facility that this company owns and/or operates	
PERMIT APPLICATION TYPE	
18. Specify Reason for Application	☐ New Facility ☐ New Source at Existing Facility ☒ Modify Existing Source: Permit No.:PR060117 Date Issued: 5/8/06 ☐ Unpermitted Existing Source: ☐ Required by Enforcement Action: Case No.:
CERTIFICATION	
IN ACCORDANCE WITH IDAPA 58.01.01.123 (RULES FOR THE CONTROL OF AIR POLLUTION IN IDAHO), I CERTIFY BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE STATEMENTS AND INFORMATION IN THE DOCUMENT ARE TRUE, ACCURATE, AND COMPLETE.	
19. Responsible Official's Name/Title	Randy Walters / GM
20. RESPONSIBLE OFFICIAL SIGNATURE	Randy Walters — Date: 4/17/07
21. ☐ Check here to indicate you would like to review a draft permit prior to final issuance.	

DE/AFS/SF

Cover Sheet **Form CS**

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

PERMIT TO CONSTRUCT APPLICATION

Revision 2
02/13/07

Please see instructions on page 2 before filling out the form.

DEQ USE ONLY
Date Received
RECEIVED APR 26 2007 DEPARTMENT OF ENVIRONMENTAL QUALITY STATE AIR PROGRAM
Project Number
Payment / Fees Included? Yes ☑ No ☐ $1,000.00
Check Number 41063

COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER

1. Company Name	Happ Taylor & Sons Corp. DBA Kniferiver		
2. Facility Name	Kniferiver Haman	3. Facility ID No.	777-00383
4. Brief Project Description - One sentence or less	Rock Crusher		

PERMIT APPLICATION TYPE

5. ☐ New Facility ☐ New Source at Existing Facility ☐ Unpermitted Existing Source
☒ Modify Existing Source: Permit No.: PR060117 Date Issued: 5/8/06
☐ Required by Enforcement Action: Case No.: _____

6. ☒ Minor PTC ☐ Major PTC

FORMS INCLUDED

Included	N/A	Forms	DEQ Verify
☐	☒	Form GI – Facility Information	☐
☐	☒	Form EU0 – Emissions Units General	☐
☐	☒	Form EU1 - Industrial Engine Information Please Specify number of forms attached: _____	☐
☒	☐	Form EU2 - Nonmetallic Mineral Processing Plants Please Specify number of forms attached: _____	☐
☐	☒	Form EU3 - Spray Paint Booth Information Please Specify number of forms attached: _____	☐
☐	☒	Form EU4 - Cooling Tower Information Please Specify number of forms attached: _____	☐
☐	☒	Form EU5 – Boiler Information Please Specify number of forms attached: _____	☐
☐	☒	Form HMAP – Hot Mix Asphalt Plant Please Specify number of forms attached: _____	☐
☐	☒	Form CBP - Concrete Batch Plant Please Specify number of forms attached: _____	☐
☐	☒	Form BCE - Baghouses Control Equipment	☐
☐	☒	Form SCE - Scrubbers Control Equipment	☐
☐	☒	Forms EI-CP1 - EI-CP4 - Emissions Inventory– criteria pollutants (Excel workbook, all 4 worksheets)	☐
☐	☒	PP – Plot Plan	☐
☐	☒	Forms MI1 – MI4 – Modeling (Excel workbook, all 4 worksheets)	☐
☐	☒	Form FRA – Federal Regulation Applicability	☐

Emissions Units - Nonmetallic Mineral Processing Plant **Form EU2**

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

PERMIT TO CONSTRUCT APPLICATION

Revision 2
02/14/07

Please see instructions on page 2 before filling out the form.

This form requests information about equipment at a nonmetallic mineral processing plant, as defined in 40 CFR 60.671, that generates fugitive emissions only.

In addition, forms EU0 and appropriate control equipment forms should be used for each stack emission point from the same plant.

IDENTIFICATION		
Company Name:	Facility Name:	Facility ID No:
Happ Taylor & Sons DBA Kniferiver	Knife River Haman	777-00383
Brief Project Description:	Ready Mix / Asphalt / Aggregate Producer	

EQUIPMENT (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS					
1. Equipment Description	2. Construction Date	3. Serial Number	4. Equipment ID Number (company's)	5. Rated Capacity	6. Emission Control Type
Pioneer Jaw	7/06	AT-42-210	7171	300 T/Hr	N/A
ISC VSI-77	7/06	77-145	7172	200 T/Hr	H2o Nozzel
EL-Jay Cone	7/06	776	7173	200 T/Hr	H2o Nozzel
JCI Screen	7/06	5-041309	7016	6x20 3deck	N/A
Conveyor	7/06		7174	42"	N/A
Conveyor	7/06		7175	30"	N/A
Conveyor	7/06		7176	30"	N/A
Conveyor	7/06		7177	30"	N/A
Conveyor	7/06		7178	30"	N/A
Conveyor	7/06		7179	30"	N/A
Conveyor	7/06		7180	30"	N/A
Conveyor	7/06		7181	30"	N/A
Loadout Bunker	7/06		7182	45 Ton	N/A
Loadout Bunker	7/06		7183	24 Ton	N/A
Conveyor	7/06		7184	30"	N/A
Conveyor	7/06		7185	30"	N/A

OPERATING SCHEDULE (hours/day, or hours/week, or months/year, or other)	
7. Actual Operation	10 Hrs / day
8. Maximum Operation	

DE/AFS/SF

Particulate Matter and Visible Emissions Testing on The Hauk Asphalt Plant Baghouse and Visible Emissions on the Materials Crushing/Handling System Winkler Materials & Construction Rathdrum, Idaho

Test Date:
September 6, 2006

Prepared for:
Winkler Materials & Construction
3978 W. Wyoming Avenue
Rathdrum, ID 83858

Prepared by:
Bison Engineering, Inc.
1400 11th Avenue
Helena, MT 59601
(406) 442-5768
www.bison-eng.com

Report Date:
October 3, 2006

EXECUTIVE SUMMARY

Bison Engineering, Inc. (Bison) was retained by Winkler Materials & Construction (Winkler) to perform Title 40 Code of Federal Regulations (CFR) Part 60, Appendix A, Method 5 particulate matter tests and Method 9 opacity observations on their Hauk hot mix asphalt plant, and perform opacity observations on the associated material crushing and handling facility. The facility is located at Rathdrum, Idaho. The tests conformed to requirements specified in Permit to Construct No. P060100 and the June 29, 2006, pretest protocol.

Table 1 summarizes the hot plant emission data and the permitted limits. Materials crushing and handling opacities are presented in the text of this report.

Table 1: Summary of Hauk Asphalt Plant Baghouse Stack Emissions

Winkler Materials and Construction Hauk Hot Mix Plant Baghouse Emissions Rathdrum, Idaho, September 6, 2006		
Pollutant	**Emissions**	**Permitted**
Particulate matter grain loading	0.005 gr/dscf	0.04 gr/dscf
Particulate matter mass rates	0.62 lbs/hr	8.25 lbs/hr
Opacity %, 6 min. avg.	0%	20%

gr/dscf = grains per dry standard cubic feet
lbs/hr = pounds per hour

CERTIFICATION OF REPORT INTEGRITY

Bison Engineering, Inc. certifies this report represents the emissions tested at the Winkler asphalt plant located at their Rathdrum, Idaho, facility. Every effort was made to obtain accurate and representative data according to emission testing requirements set forth in IDEQ Permit to Construct No. P060100 and IDAPA 58.01.01.200 (Rules for the Control of Air Pollution in Idaho). The test team complied with the procedures specified in Title 40 CFR 60, Appendix A, Method 5, *Determination of Particulate Emissions from Stationary Sources,* and Method 9, *Visual Determination of the Opacity of Emissions from Stationary Sources.*

Report Author: Mike Chovanak, EIT

Title: Project Engineer

Signature: Mike Chovanak

Date: 10-3-06

Reviewer: Calvin W. Loomis, P.E.

Title: Team Leader / Project Engineer

Signature:

Date: Oct 3/06

REPORT TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

SOURCE TEST REPORT

1.0 INTRODUCTION

Bison Engineering, Inc. (Bison) was retained by Winkler Materials & Construction (Winkler) to perform particulate and opacity emissions source testing on their hot mix asphalt plant and material crushing and handling system located in Rathdrum, Idaho. The purpose of the testing was to show compliance with the emissions limits set forth in the Idaho Department of Environmental Quality (IDEQ) Permit to Construct No. P-060100.

Bison submitted a pre-test protocol to Dan Redline of IDEQ on June 29, 2006. The protocol detailed the sources to be tested, pollutants to be measured, testing and analytical methods to be employed, test and report dates, source operating parameters during the test, and pretest quality assurance procedures. Bison received a protocol acceptance letter from Mr. Redline dated August 14, 2006. Dan's letter approved the protocol with three comments. The first was to set the plan for opacity observations, the second stated that production and baghouse rates were to be measured during the test, and the third was to include the fuel usage during the test. The testing and opacity observations were performed on September 6, 2006.

This report summarizes the results from the test, production and operating rates, methods employed, sample handling and analysis, and quality control/quality assurance (QC/QA) procedures. The appendices to this report contain a copy of the protocol and correspondence, field and lab data, spreadsheets, example calculations, nomenclature and formulae, and calibration data.

1.1 Project Personnel

Bison was the emission testing consultant for this test. Bison is a full service air quality consulting company that provides ambient air monitoring and meteorological monitoring, air quality permitting, air quality modeling, regulatory negotiations, process-to-emissions optimization and source testing services. Bison's ***Process and Emission Services*** team is led by Calvin Loomis, P.E., Project Engineer and Team Leader. Additional team members are Mike Chovanak, E.I.T., Project Engineer; Bill Shaw, P.E., Project Engineer; Dave Blankenship, Senior Environmental Technician; and Jim Wollenberg, Environmental Technician. The following personnel were responsible for the emission test or were associated with the project.

1.1.1 Bison Engineering, Inc.

Mike Chovanak, Project Engineer, managed the testing project and authored the emission report. David Blankenship, Senior Technician, and Jim Wollenberg, Environmental Technician, performed the Method 5 isokinetic testing. Mike performed the opacity observations. Mike and Dave performed laboratory analysis on the Method 5 samples. Cal Loomis, PE, Team Leader, performed a final report review.

Bison Engineering, Inc.
1400 11th Avenue
Helena, MT 59601
Phone: (406) 442-5768
Fax: (406) 449-6653
Email: bison@bison-eng.com

1.1.2 Winkler Materials & Construction

John Knadler is the primary contact for Winkler Construction. John is the hot plant operator. He coordinated the on-site testing and provided production data.

Facility:

Winkler Materials and Construction
3978 W. Wyoming Avenue
Rathdrum, Idaho 83858
Randy Walters, Plant Manager
Phone: 208/687-8280
Cell: 509/951-9206; Fax: 208/687-8373

Owner and Permittee:

Norm's Utility Contractor, Inc.
PO Box 2047
Coeur d'Alene, ID 83816
Cell 208/661-5076

Environmental Mgr.:

Morse Brothers Incorporated
Jeff Steyaert, Environmental Manager
Phone: 541/928-6491; Fax: 541/928-6494
Email: jeff.steyaert@morsebros.com

1.1.3 Idaho Department of Environmental Quality

The pretest protocol was addressed to Dan Redline of IDEQ. J. Scott Honodel was present and represented IDEQ during the September 6 testing.

Idaho Department of Environmental Quality
2110 Ironwood Parkway
Coeur d'Alene, ID 83814
Phone: (208) 769-1422

2.0 EMISSION SOURCE INFORMATION

2.1 Facility Description

The facility is a rotary drum asphalt plant and associated crushing/screening facility located in Rathdrum, Idaho.

2.2 Asphalt Plant Emission Source Description

Winkler operates a 1991 Hauk Quad Burner, Model 8835HMSIPR, Parallel Flow Drum Mix Asphalt Plant. The asphalt plant is subject to the New Source Performance Standards (NSPS) set forth in Title 40 Code of Federal Regulations (CFR) Part 60 Subpart I *"Standards of Performance for Hot Mix Asphalt Facilities."* The plant identification number and permit to construct numbers are presented below:

Asphalt Plant Facility ID:	No. 777-00372
Asphalt Plant Permit:	No. P-060100

The plant natural gas burner provides process heat to the inclined dryer which heats and dries aggregate. Hot asphaltic oil is added to the aggregate and mixed into asphalt cement. The particulate emissions from this unit are controlled by a baghouse. The plant is required to meet the following emission limits:

- Particulate matter (PM) - 0.04 grains per dry standard cubic foot (gr/dscf);
- Particulate matter (PM) - 8.25 pounds per hour;
- 20% opacity averaged over six consecutive minutes.

The stack outlet is approximately 20 feet from the ground with an inside stack diameter of 40 inches.

2.3 Material Handling, Crushing and Screening Facility

The material handling, crushing and screening facility is subject to NSPS Subpart OOO, *"Standards of Performance for Nonmetallic Mineral Processing Plants."* The facility identification number and permit to construct numbers are presented below:

Crushing Facility ID:	No. 777-00383
Crushing Facility Permit:	No. PR-060117

Winkler operates a 1974 Pioneer jaw crusher, an El-Jay cone crusher, an ISC V.S.I., and various other equipment associated with nonmetallic mineral processing.

The equipment listed above is designed for use in crushing, screening, and combining of rock for use as raw material in various aspects of road making, landscaping, and other designated operations.

Rule Registration Notification PR-060117 states that the rules for control of nonmetallic mineral processing plants are set forth in IDPA 58.01.01.790 through 802 (Rules for Control of Air Pollution in Idaho). This rule specifies that the observed opacity emissions from all nonmetallic mineral processing plants be limited to 20% for any 3-minute average during any 60-minute period from each transfer location, drop point, screening and crushing activity.

3.0 EMISSION TEST

3.1 Asphalt Plant Baghouse Emission Test Results

The following table summarizes the emission limitations and the emission test results. Emissions are presented in grain loading units of grains per dry standard cubic foot (gr/dscf) corrected to 68°F and one atmosphere, and mass rate units of pounds per hour (lbs/hr).

Table 2: Summary of Asphalt Plant Baghouse Emissions Test Results

Winkler Hauk Asphalt Plant Baghouse Rathdrum, Idaho Test Results, September 6, 2006					
	Run 1	Run 2	Run 3	Average	Limitations
Start Time	8:40	10:20	12:05	NA	NA
Test Duration, min	60	60	60	NA	≥60[1]
Test Sample Volume, dscf	57.15	37.00	34.64	NA	≥31.8[1]
Particulate Matter, gr/dscf	0.0039	0.0047	0.0056	0.005	≤ 0.04
Particulate Matter, lb/hr	0.51	0.64	0.71	0.62	≤ 8.25
Isokinetics, % I	101	106	106	NA	90≤ I ≥110
Highest 6-min Opacity, %	0	0	0	0	≤ 20

[1] 40 CFR 60 Subpart I requirement.

3.1.1 Asphalt Plant Process Information

The asphalt plant operated at normal conditions during the testing period and used natural gas as the burner fuel. Mr. John Knadler is the hot plant operator and he provided the production data and the baghouse operating parameters for the testing period. Production data is summarized in the following table. The plant asphalt production averaged 248 tons per hour which is 99% of the 250-ton rated capacity. Additional production data is located in an appendix of this report.

Table 3: Asphalt Plant Production Data

Winkler Asphalt Plant, Rathdrum, Idaho Test Results, September 6, 2006					
Run 1		Run 2		Run 3	
Time	Ton/hr	Time	Ton/hr	Time	Ton/hr
08:45	247.77	10:15	247.86	12:00	248.45
09:00	248.05	10:30	247.55	12:15	248.11
09:15	247.69	10:45	247.88	12:30	247.89
09:30	247.74	11:00	248.10	12:45	247.89
09:45	248.03	11:15	247.96	13:00	248.03
Average	**247.86**	**Average**	**247.87**	**Average**	**248.07**

3.1.2 Asphalt Plant Emission Control System Operation

The asphalt plant baghouse emissions control system maintained a pressure differential of 3.4 inches of water. This was checked at the beginning and end of each test run and logged on the field data sheets. It is believed the pressure did not change up or down at any time during testing. Please note: IDEQ requested checks be done four times during each test run; this was missed during field activity.

3.1.3 Asphalt Plant Test Field Notes

Bison arrived on site at 4:00 pm on September 5 and set up equipment for testing the next day. On September 6, Bison arrived on-site at 7:30 a.m., proceeded directly to the asphalt plant and finished test preparation. Access to the stack was accomplished by manlift. The testing proceeded as planned without deviation to the pretest protocol or the methods listed in the protocol. Test times and durations are listed in the report table. Each test run passed the required post-test leak checks. Post-test equipment calibrations and audits were performed and are documented in an appendix of this report.

3.2 Material Handling, Crushing and Screening Opacities

Visible emissions (VE) were performed by a certified opacity reader. Opacity observations were performed on the crushers, screens and material drop points. Bison mapped out the facility and gave each point a number (map enclosed). The opacity for all points except #6 and #12 were zero. Drop point #6 (the belt carrying material to the secondary crusher) had an average opacity of 6% for the highest 6-minute period. Drop point #12 (the belt carrying the product from the secondary crusher) had an opacity of 11.25% for the highest 6-minute period. Results are shown in Table 4.

Table 4: Material Handling, Crushing and Screening Opacity Observations

Winkler Crushing Facility, Rathdrum, Idaho Opacity Observations, September 6, 2006				
Source	Start Observation	End Observation	Highest 6-min. Average (%)	Limitations
1	8:55	9:54	0	20%
2	8:55	9:54	0	20%
3	8:55	9:54	0	20%
4	8:55	9:54	0	20%
5	10:20	11:19	0	20%
6	11:35	12:34	6	20%
7	13:50	14:49	0	20%
8	11:35	12:34	0	20%
9	11:35	12:34	0	20%
10	11:35	12:34	0	20%
11	12:48	13:47	0	20%
12	12:48	13:47	11.25	20%
13	12:48	13:47	0	20%
14	Not operating			20%
15	Not operating			20%
16	Not operating			20%
17	10:20	11:19	0	20%
18	10:20	11:19	0	20%
19	10:20	11:19	0	20%

4.0 EMISSION TEST METHODS AND PROCEDURES

4.1 Sample Location and Sample Points Determination

Sample location and sample points are determined by EPA Method 1. This source met the minimum upstream/downstream criteria as listed in Method 1. This source did not fit the criteria to produce cyclonic flow. Method 1 results are presented in an appendix of this report.

4.2 Test Methods and Procedures

Bison testing personnel performed the following EPA methods described in Title 40, Code of Federal Regulations (CFR), Part 60, Appendices A and B.

EPA Reference Method 1, ***"Sample and Velocity Traverses for Stationary Sources."*** The objective of Method 1 is to determine a suitable location for testing and to determine the velocity and/or sample points for the source. The distance upstream to atmosphere from the sampling ports (Distance A) is measured and the distance downstream to the nearest disturbance from the sample points (Distance B) is measured. Distances A and B were applied to Method 1, Figure 1-1 for particulate matter (PM) sampling points or Figure 1-2 for velocity measurement points. These figures give the minimum points according to the dimensions of the source. The number of points and the stack diameter are then applied to Method 1, Table 1-2 to determine equal area measurement points within the source. The results of Method 1 sampling location and sample or velocity point measurement locations can be found in an appendix to this report.

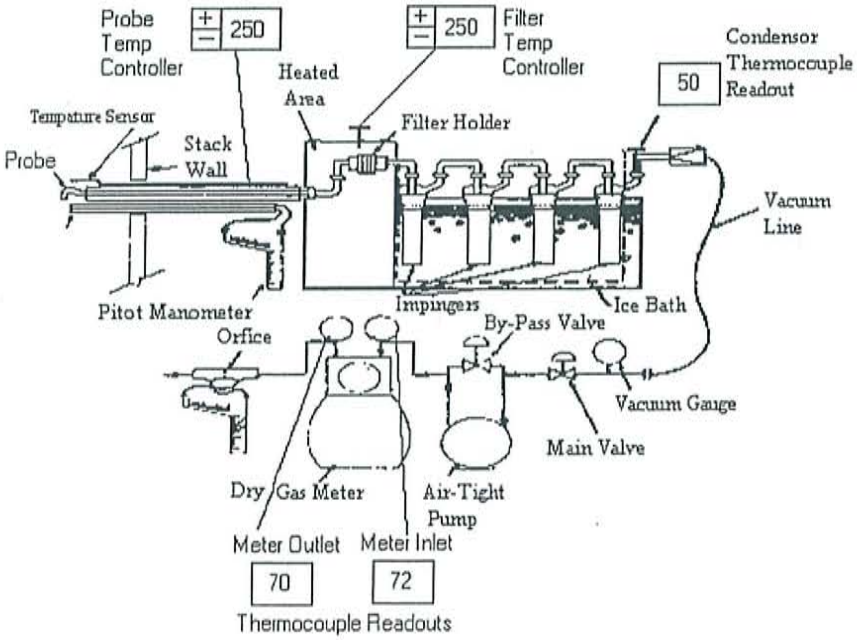
EPA Reference Method 2, ***"Determination of Stack Gas Velocity and Volumetric Flow Rate (Type-S Pitot Tube)."*** The objective of Method 2 is to measure stack gas velocity, collect temperature data, and calculate a volumetric flow. Method 2 velocity measurements are performed using a Type S pitot tube or can be performed concurrently with the Method 5 testing using a stainless steel Type S pitot tube attached to the particulate sampling probe. Differential pressures were measured using an inclined manometer, and temperatures were measured using a k-type thermal indicator. Bison has incorporated 0.84 as the Type S pitot tube coefficient (Cp). Velocity measurements are performed concurrently with gaseous sampling. The average velocity, temperature, static pressure, and source area are used to calculate volumetric flow within the source. Field data sheets, results from the flow calculations, and calibration data can be found in an appendix to this report.

EPA Reference Method 3, ***"Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources."*** The objective of Method 3 is to determine the molecular weight (MW) of the source stream and to determine oxygen ($\%O_2$) and carbon dioxide (CO_2) concentrations in the stack gas stream. MW was determined according to the procedures cited in the pretest protocol.

EPA Reference Method 4, *"Determination of Moisture Content in the Stack Gases."* The objective of Method 4 is to determine the moisture content of a gas stream. The principle of the method is to extract a sample from the source at a constant rate and impinge it through chilled water and silica gel. The moisture is removed from the sample stream and the volume (or mass) of water extracted is determined. The sample volume and water volume (or mass) are used to calculate the moisture content of the stack gas. The results of pre- and post-test dry gas meter (DGM) calibrations can be found in the DGM calibrations table. The DGM calibration data can be found in an appendix of this report. The impinger waters are volumetrically measured on-site and the silica gels are transported to Bison's lab and weighed. The test data is recorded on field data sheets and then entered into spreadsheets for moisture determination calculations. This data and the resulting moisture can be found in the appendices of this report.

Method 5,*"Determination of Particulate Emissions from Stationary Sources" (Methods 2 & 4 Inclusive).* The objective of Method 5 is to determine the filterable particulate matter (PM) from a source. Bison used a Method 5 sampling train with a stainless steel probe to gather the particulate sample. Method 5 incorporates Method 2 "velocity measurements" and Method 4 "moisture measurements." Field data, spreadsheet calculations, example calculations, and pitot tube, probe alignment and thermal indicator calibrations are included in an appendix to this report. There was no deviation from the method. A schematic of the Method 5 sampling system is shown below.

Typical isokinetic sampling train.



EPA Method 9, ***"Visual Determination of the Opacity of Emissions from Stationary Sources."*** The objective of Method 9 is to determine the visible opacity of a source. The observer of the opacity must hold a current certification which is located in an appendix to this report along with the field observation data sheets.

4.3 Sample Handling, Description and Analysis

Chain of Custody: On-site sampling and sample transport to Bison was led by Jim Wollenberg. At the Bison lab, Dave Blankenship and Mike Chovanak performed the sample analysis.

Sample Description: The impinger waters from the baghouse were clear with no film. The filters were light tan in color.

Filter Analysis: Bison weighed filters in an environmentally controlled room. Before field use, the filters were desiccated for a minimum of 24 hours, then weighed and desiccated at 6-hour intervals until a constant pre-test tare was achieved. After the tests, the filters were desiccated for a minimum of 24 hours, then weighed and desiccated at 6-hour intervals until constant post-test weight was achieved. The difference between the average pre-test tare and average post-test weight was the filter mass capture. Sample descriptions are recorded on the field data forms.

Nozzle, Probe and Filter-bell Rinse Analysis: The nozzle, probe and filter-bell were rinsed with acetone. The rinsate was collected in a sample bottle, transferred to a pre-conditioned, tared aluminum sample boat and heated to evaporate the acetone. The boat was again conditioned and weighed to determine "front-half" rinse particulate matter. The rinse mass capture was added to the filter particulate capture to determine "front-half" filterable PM emissions.

Silica Gel: Bison transports pre-dried silica gel in airtight containers holding approximately 250 grams. Each container is weighed prior to use in a sampling train. After testing, the gel is placed back into the container and reweighed for moisture gain. Post-test silica gel weight gains are recorded on field data sheets.

5.0 QUALITY ASSURANCE

5.1 Quality Assurance

Bison's quality assurance program is designed to ensure that all source testing methods are followed and are performed by competent, experienced personnel. Bison's equipment is properly calibrated and maintained in good working order. Procedures for sample collection, recovery, and analysis are performed according to applicable EPA methods. Bison's practices conform to the procedures in the Environmental Protection Agency (EPA) *Quality Assurance Handbook for Air Pollution Measurement Systems*, Volume 3, EPA-600/4-77-0276, 1977, as amended.

Emission testing quality assurance checks and quality controls (QA/QC) require three steps: before, during, and after field testing. "Before" QA/QC procedures are performed in Bison's lab, "during" QA/QC checks are recorded on the field data sheets, and "after" QA/QC procedures are performed at Bison's lab. These data can be found in the appendices. The following table describes Bison's QA/QC, calibration and audit procedures and schedule.

5.2 Documentation, Tracking and Certification

Bison uses a project number for document control and tracking for all projects. Each project that Bison works on is assigned a project number. All documentation pertaining to that project is filed in the same place under that project number. This assures all pertinent information can be found easily at a later date.

The tracking number for this project is: **WIN206731**

Bison's testing project leader signs an "Emission Source Test Certification" to document and authenticate that the testing was performed according to the methods and applicable Idaho Department of Environmental Quality (IDEQ) requirements.

Any changes or revisions to the Source Test Protocol are kept with the protocol and appended to the source test report. Any correspondence from IDEQ regarding the protocol is also appended to the source test report.

5.3 Sampling Protocol

Bison's test, laboratory, reporting, and quality assurance procedures conform to the requirements specified in the *Quality Assurance Handbook for Air Pollution Measurement Systems, Vol. III, Stationary Source Specific Methods,* published by the U.S. Environmental Protection Agency in August, 1977, as revised and amended (cat. #EPA-600/4-77-027b).

The individual test methods specify handling procedures for physical samples (liquids, traps, etc.). Bison follows the procedures outlined in the appropriate methods as described in EPA 40 CFR Part 60, Appendix A and Appendix B.

5.4 Audit Samples

Bison requested an audit sample for any of the methods performed in this testing project. No audit samples were supplied by the enforcement agency.

5.5 Equipment Calibration and Maintenance

Bison's laboratory personnel periodically calibrate equipment and instruments with standards traceable to the National Institute of Standards and Technology (NIST). All equipment requiring calibrations for the methods described within this protocol will meet the appropriate criteria as specified in EPA 40 CFR Part 60, Appendix A.

Table 5 shows Bison's calibration and audit procedure schedule. Bison defines a calibration as the procedure of changing a measurement system or device to match a constant or standard measurement system or device, whereas an "audit" is checking the variance between a measurement system or device and a constant or a standard measurement system or device. Bison's equipment meets applicable EPA method calibration parameters. This report includes applicable calibration data as an appendix.

Table 5: Equipment Calibration and Audit Procedures

Equipment Calibration and Audit Procedure		
Unit	**Equipment Requirement**	**Reference**
Isolated Type S Pitot Tubes	Calibration prior to initial field use.	Method 2, 10.1
	Re-examined after each field use.	Method 2, 10.1.5.2.1
Temperature Gauges	After each field use.	Method 2, 10.3.1
Barometer	Calibrated against Hg barometer.	Method 2, 10.4
Metering System	Calibration prior to use.	Method 5, 10.3.1
	Calibration after use.	Method 5, 10.3.2

Dry Gas Meter (DGM) Calibrations

Volumetric sampling by a dry gas meter (DGM) requires calibration prior to sampling and an audit after sampling. The following table is a summary of the results of the calibration of the DGM used on this project. Calibration data can be found in an appendix to this report. Table 6 presents the results of the pre- and post-test DGM calibrations.

Table 6: DGM Equipment Calibration Results

Bison Engineering Equipment Calibration Record					
Unit	Test Avg. ΔH	"Y" Full-Calibration	"Y" Post-Calibration	Results	Required
Date	na	8/06/06	9/20/06	na	≤ 60 days post-test
Meter Box 3	1.93	0.978	0.984	0.6%	±5% from full-calibration

Method 5, Section 5.3.3, states that, should the pre- and post-"Y" factor calibrations differ more than 5%, the lesser "Y" value shall be used in the calculations.

5.6 Data Reduction Procedures/Methods and Quality Assurance

Field data such as velocity measurements and/or isokinetic sampling data are hand-recorded on field data sheets. The data is then entered into computer spreadsheets where QA/QC and emission calculations are performed according to the method procedures. Test data and reports are reviewed for technical content by a staff engineer or staff scientist, and final reviews are performed by either the team leader or senior staff. Additional sample calculations will be submitted upon request.

Technical Issue: Rounding of Significant Figures

If the first digit to be discarded is less than five, the last digit retained should not be changed. When the first digit discarded is greater than five, or if it is a five followed by at least one digit other than 0, the last figure retained should be increased by one unit. When the first digit discarded is exactly five, followed only by zeros, the last digit retained should be rounded upward if it is an odd number, but no adjustment made if it is an even number.

For example, if the emission standard is 90, than 89.501 would be rounded to 90, 90.357 would be rounded to 90, 90.500 would be rounded to 90, and 90.501 would be rounded to 91.

Standard	Number	Rounded To
90	89.501	90
90	90.357	90
90	90.500	90
90	90.501	91

5.7 Atmospheric Pressure Measurements

Bison uses a field barometric pressure (Bp) gauge that is calibrated prior to each field deployment against a mercury-in-glass standard barometer. The Bp is measured at the sample location.